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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/618,136

07/11/2003

Roger Lapuh

3239P107

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08/03/2007

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EXAMINER

WONG, XAVIER S

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

08/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/618,136

Applicant(s)

LAPUH ET AL.

Examiner

Xavier Szewai Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25th May 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 20 is/are pending in the application.
- 4a) Of the above claim(s) 4 & 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

- ◆ Applicant's Amendment filed 25th May 2007 is acknowledged
- ◆ Claims 1, 9, 14 and 19 have been amended; and claims 4 and 20 have been cancelled
- ◆ Claims 1 – 3 and 5 – 19 are still pending in the present application
- ◆ This action is made NON-FINAL based on new grounds of rejections
- ◆ 103 rejections have been withdrawn based on the response

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1, 3, 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by **Di Benedetto et al (U.S Pat 7,061,858 B1)**.

Consider claim 1, **Di Benedetto et al** disclose two supervisor (aggregation) cards interconnected by InterSwitch Link / Port Aggregation (PAgP) protocol in which an active supervisor device shares state information with a standby supervisor device and allow the system to logically operate in a single device as if through an IST link (col. 2 ln. 37-40/43-52; col. 4 ln. 48-67); synchronizing forwarding records of local routing instances for

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IP networking between the two devices (col. 1 ln. 62-66; col. 10 ln. 23-25; col. 15 ln. 38-41; fig. 2).

Consider claim 3, as applied to claim 1, **Di Benedetto et al** mention forwarding MAC records (col. 1 ln. 58-59; col. 18 ln. 1-4).

Consider claims 5 and 6, as applied to claims 3 and 5, **Di Benedetto et al** disclose synchronization of MAC records and exchanging MAC addresses supported by the first device with a second device (col. 1 ln. 50-55; col. 19 ln. 39-53/62-67; col. 20 ln. 1-3); and setting routing bit (through bit maps) in each record to enable local routing instances of the standby (first) device to process the packets [with said MAC address associated with said MAC records] (col. 16 ln. 18-34).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 and 7 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Di Benedetto et al (U.S Pat 7,061,858 B1)** in view of **Liu et al (U.S Pat 7,197,660 B1)**.

Consider claim 2, as applied to claim 1, **Di Benedetto et al** disclose the claimed invention except prior to synchronizing the forwarding records, exchanging messages between the two aggregate devices to ensure that RSMLT is enabled on both devices. **Liu et al** disclose exchanging of control messages between a master and backup device to enable the active-active configuration for both devices (col. 2 ln. 30-48) so data may simultaneously be in master and backup devices and further the configuration may be used in a router-switch (a Layer 3 device), as in RSMLT (col. 1 ln. 17-21; col. 8 ln. 44-58). It would have been obvious to one of ordinary skill in the art to incorporate the teachings by **Liu et al** in the method of **Di Benedetto et al**, in order to synchronize data transfer and prevent data loss.

Consider claim 7, as applied to claim 2, **Di Benedetto et al** further disclose when a failure of link interconnection occurs in the active (second) device, the (first) standby device will take over (therefore, handling all packets from the first device) the standby device (col. 2 ln. 49-50; col. 3 ln. 61-65; col. 11 ln. 60-63).

Consider claim 8, as applied to claim 2, **Liu et al** further disclose when a loss of link occurs at a switch, the other switch handles all information from the link-down switch (col. 7 ln. 20-29; clm. 1).

Consider claims 9, 10, 11, 13 and 19, **Di Benedetto et al** disclose two supervisor (aggregation) cards interconnected by InterSwitch Link / Port Aggregation (PAgP) protocol in which an active supervisor device shares state information with a standby supervisor device and allow the system to logically operate in a single device as if through an IST link (col. 2 ln. 37-40/43-52; col. 4 ln. 48-67); both first and second device comprise ports 203, processing logic EARL 214 and memory with routing/forwarding table 218 capable for storing the corresponding MAC record sets used by one or more local routing instances (col. 1 ln. 50-59; col. 6 ln. 4-16; col. 9 ln. 1-14; col. 15 ln. 62-67; col. 16 ln. 18-34; fig. 2). **Di Benedetto et al** further disclose the synchronization of MAC records and exchanging MAC addresses supported (therefore, obtained) by the first device with a second device (col. 1 ln. 50-55; col. 19 ln. 39-53/62-67; col. 20 ln. 1-3); and setting routing bit (through bit maps) in each record to enable local routing instances of the standby (first) device to process the packets [with said MAC address associated with said MAC records] (col. 16 ln. 18-34). However, **Di Benedetto et al** may not have explicitly disclosed a Layer 3 networking protocol within the aggregation devices; a first aggregation device

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obtaining a second set of MAC records from a second aggregation device; first aggregation device informs second aggregation device it is RSMLT enabled. **Liu et al** disclose exchanging of control messages between a master and backup device to enable the active-active configuration for both devices (col. 2 ln. 30-48) so data may simultaneously be in master and backup devices and further the configuration may be used in a router-switch (a Layer 3 networking protocol device), as in RSMLT (col. 1 ln. 17-21; col. 8 ln. 44-58). Both master and backup device have redundancy tables for storing MAC record sets (col. 4 ln. 21-26; col. 8 ln. 38-43). It would have been obvious to one of ordinary skill in the art to incorporate the teachings by **Liu et al** in the system of **Di Benedetto et al**, in order to facilitate layer 2 / layer 3 routing and synchronize data transfer and prevent data loss.

Consider claim 12, as applied to claim 9, **Liu et al** further disclose two redundant (aggregation) switches 301 and 302 (col. 7 ln. 19-29; fig. 3).

Consider claim 19, **Di Benedetto et al** disclose an supervisor aggregation device interconnected to another peer by InterSwitch Link / Port Aggregation (PAgP) protocol in which an active supervisor device shares state information with a standby supervisor device and allow the system to logically operate in a single device as if through an IST link (col. 2 ln. 37-40/43-52; col. 4 ln. 48-67), wherein a control plane is in communication with a data plane (fig. 2 item 202/204 embodiments), which provides sub-second failover recovery (*abstract*); and synchronization of MAC records and exchanging MAC addresses supported by the first device with a second device (col. 1 ln. 50-55; col. 19 ln. 39-53/62-67; col. 20 ln. 1-3) and local routing instances for IP networking (col. 1 ln. 63-65;

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col. 16 ln. 18-34). However, **Di Benedetto et al** may not have explicitly mentioned providing *enough time to converge* without adversely affecting data forwarding operations through synchronization process. **Liu et al** disclose time required for recovery (convergence) is only slightly longer [enough time] than time required detecting a master device failure and does not affect network performance [on-going connections] (col. 5 ln. 53-62; col. 8 ln. 15-19; clm. 1). It would have been obvious to one of ordinary skill in the art to incorporate the teachings by **Liu et al** in the device of **Di Benedetto et al**, in order to avoid data loss.

Claims 14 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Di Benedetto et al** (U.S Pat 7,061,858 B1) in view of **Liu et al** (U.S Pat 7,197,660 B1) and in further view of **Goodwin** (U.S Pub 2002/0124107 A1).

Consider claims 14 and 15, as applied to claims 13 and 14, **Di Benedetto et al**, as modified by **Liu et al**, disclose an EVENT_BEGIN message and then a SYNC_RECORD_MESSAGE with routing instances for a supervisor device to begin synchronization of MAC records (col. 14 ln. 31-44/60-63; col. 15 ln. 33-53). However, **Di Benedetto et al** may not have explicitly mentioned the message comprises of IP/IPX network address and MAC addresses of routing instances, VLAN identifiers of a VLAN on which the IP/IPX routing instances participate. **Goodwin** discloses a *VLAN Advertisement Protocol*, deploys a technique called *Group Mobility* that recognizes both IP and IPX frames (paragraph 0024). Therefore, the invention is able to extract data received from hello messages that are used to build routing tables, which contain IPX

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addresses; and VLAN membership (identification) tables, which contain MAC address information (paragraphs 0041-43, 0053-59; table 3). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of a system that sends second messages that comprises IP/IPX address and MAC address of IP/IPX routing instances of the first aggregation switch and VLAN identifiers of a VLAN of IP/IPX routing instances participate as taught by **Goodwin**, in the system of **Di Benedetto et al** as modified by **Liu et al**, in order to automatically identify network nodes.

Consider claim 16, **Di Benedetto et al** disclose after the second SYNC_RECORD_MESSAGE, an event manager causes routing instances to wait [hold-down time] before instances are routed to the new supervisor which [programs] determines which records are valid (col. 4 ln. 53-67; col. 7 ln. 41-59; fig. 3 items 204 & 328; col. 16 ln. 34-38).

Consider claim 17, as applied to claim 16, **Di Benedetto et al** disclose after the wait [hold-down time expiration], the active supervisor supports process the records / instances to be routed to the standby supervisor (col. 16 ln. 54-66).

Consider claim 18, as applied to claim 17, **Di Benedetto et al** disclose a newly active (former standby) supervisor completes a consistency check [hold-up time] and resume forwarding messages previously disrupted from the failure of the active device (col. 21 ln. 14-28).

Response to Arguments

Applicant's arguments filed on 25th May 2007 with respect to claims **1 – 3** and **5 – 19** have been considered but are moot in view of the new grounds of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A.) **Bare et al (U.S Pub 2003/0016624 A1)** mention a path recovery on failure for load balancing switches

B.) **Guess et al (U.S Pub 2003/0048746 A1)** mention a failover transition system for VLAN with master and standby switches

C.) **Busschbach et al (U.S Pat 6,202,170 B1)** mention automatic protection switching

D.) **Oran et al (U.S Pub 2006/0062141 A1)** mention fast failure detection in a switched LAN

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. This Action is made **NON-FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xavier Szewai Wong whose telephone number is 571-270-1780. The examiner can normally be reached on Monday through Friday 8 am - 5 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Xavier Szewai Wong
X.S.W / x.s.w
23rd July 2007

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